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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/576,672 | 04/21/2006 | Makoto Sanpei | 14048-029 | 7213 |
| 80711 | 7590 | 12/17/2010 | | |
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| EXAMINER | | | | |
| LENIHAN, JEFFREY S | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 1765 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/576,672

Applicant(s)

SANPEI ET AL

Examiner

Jeffrey Lenihan

Art Unit

1765

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-945)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is responsive to the amendment filed on 12/30/2009.
2. The objections and rejections not addressed below are deemed withdrawn.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Continued Examination Under 37 CFR 1.114

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 6/17/2010 and 6/25/2010 have been entered.

Claim Rejections - 35 USC § 103

5. Claims 1-6 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikemoto et al, US2002/0068797 (of record), in view of Yang et al, US2004/0106723 (of record), and Hong, US2004/0226393 (of record).
6. The rejection stands as per the reasons outlined in the previous Office Actions, incorporated herein by reference.
7. Regarding the new limitation that the α -olefin oligomer has a number average molecular weight (M_n) in the range of 400 to 1000 (for claims 1, 2, 9-12): As noted in

the Office Action mailed on 6/9/2009, Yang discloses the use of C₆ to C₁₄ oligomers having M_n in the range of 100 to 21,000 as a non-functionalized plasticizer. It has been held that in the case where the claimed ranges overlap or lie inside ranges disclosed in the prior art, a *prima facie* case of obviousness exists; see *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (MPEP § 2144.05). Barring a showing of factual evidence demonstrating unexpected results commensurate in scope with the claimed invention, it therefore would have been obvious to one of ordinary skill in the art to use an oligomer having the claimed M_n as a plasticizer in the composition of Ikemoto in view of the teachings of Yang.

Response to Arguments

8. Applicant's arguments filed 6/25/2010 have been fully considered but they are not persuasive.
9. Regarding the M_n of the oligomer component: As noted by applicant in the remarks (see page 12), Yang discloses the M_n of the oligomer additive falls within the broad range of 100-21,000; Yang further discloses the narrower range of 200-500 for some embodiments of said oligomer. The mere fact that the lower limit of 100 disclosed by Yang is less than the claimed lower limit of 300 does not teach away from the use of the overlapping portion of the prior art range and the claimed range. Applicant argues that the statement in the specification that oligomers having M_n less than 300 are not suitable for use in the claimed invention establishes the criticality of the claimed range.

The examiner disagrees, and notes that, as currently written, the claims recite a lower limit of 400 for the M_n of the oligomer. The statement cited by applicant refers to a M_n that is 25% less than the claimed lower limit of 400, and therefore does not demonstrate the criticality of the claimed range.

10. Furthermore, as discussed in previous Office Actions, applicant has not provided factual evidence to substantiate this allegation. Applicant's specification only compares the effects of the use of an oligomer having M_n of 690 (Examples 1-3) to oligomers having M_n of 287 (Comparative Example 4) or 2000 (Comparative Example 5). With regards to the claimed lower limit of 400, the examiner first notes that the M_n of the oligomer in Inventive Examples 1-3 (i.e., 690) is 172.5% of the claimed lower limit of 400. Secondly, the difference between the M_n of the oligomer in Inventive Examples 1-3 and the claimed lower limit is more than twice the difference between the M_n of the oligomer in Comparative Example 4 and the claimed lower limit. Given the facts that 1) the Inventive Examples comprise an oligomer having M_n that is 72.5% greater than the claimed limit of 400 and 2) that the difference between M_n of the inventive example and the claimed limit is more than twice the difference between the M_n of the comparative example and the claimed limit, the data presented in the specification does not establish the criticality of the claimed lower limit of 400.

11. With regards to the claimed upper limit, the difference between the M_n of the oligomer in Comparative Example 5 and the claimed upper limit of 1000 is approximately 32 times greater than the difference between the M_n of the oligomer in Inventive Examples 1-3 and the claimed upper limit. Furthermore, the M_n of the

oligomer in the Inventive Examples is 31% lower than the claimed upper limit of 1000. Given the facts that 1) the Inventive Examples comprise an oligomer having M_n that is almost one third less than the claimed limit of 1000 and 2) that the difference between M_n of the comparative example and the claimed limit is 32 times greater than the difference between the M_n of the inventive example and the claimed limit, the data presented in the specification does not establish the criticality of the claimed upper limit of 1000. Applicant therefore has not established that unexpected results are obtained commensurate in scope with the claimed range of M_n .

12. Applicant's arguments regarding the use of the oligomer of Yang with an EPDM were previously addressed in the Advisory Action mailed on 11/03/2009, incorporated herein by reference.

13. Limitations regarding the structural features of the claimed invention are addressed in the previous Office Actions with respect to the teachings of Hong.

14. Regarding the motivation to combine: Ikemoto teaches that composition of US2002/0068797 may comprise processing aids (§0034). It is known in the art of chemistry that the plasticizers are used to improve a polymer's processability by changing viscosity at processing temperatures. As Ikemoto teaches that the composition may comprise processing aids, it would have been obvious to add the olefin oligomer disclosed by Yang, known to be useful as a plasticizer for olefin polymers, for the reasons discussed on record.

15. Regarding the propylene/ethylene ratio: As discussed in previous Office Actions, the prior art renders obvious the claimed values for the propylene/ethylene ratios and

the amount of oligomer added. None of the comparative examples are disclosed as having a propylene/ethylene ratio outside the claimed range; applicant therefore has not demonstrated that unexpected results are obtained due to this ratio.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Lenihan whose telephone number is (571)270-5452. The examiner can normally be reached on Monday through Thursday from 7:30-5:00 PM, and on alternate Fridays from 7:30-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Irina S. Zemel/
Primary Examiner, Art Unit 1765

/Jeffrey Lenihan/
Examiner, Art Unit 1765

/JL/